

Form PTO-1449 (modified)

Atty. Docket No.

Serial No.

TAMK:189/HIB

09/010,317

List of Patents and Publications for Applicant's

Applicants

Magnus Höök, Joseph M. Patti, Karen L. House-Pompeo, Pietro Speziale, Danny Joh and Martin J. McGavin

INFORMATION DISCLOSURE STATEMENT

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Filing Date:

January 21, 1998

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|-------------|-----------|-----------------|------|------|-------|-----------|---------------------|
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Foreign Patent Documents

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|-------------|-----------|-----------------|----------|---------|-------|-----------|--------------------|
| l2          | B13       | WO 96/04380     | 02-15-96 | PCT     |       |           |                    |
| l2          | B14       | WO 96/04381     | 02-15-96 | PCT     |       |           |                    |
|             |           |                 |          |         |       |           |                    |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation  |
|-------------|-----------|---|
| l2          | C42       | International Search Report dated November 11, 1998 (PCT/US98/01222) (Atty. Dkt. No. TAMK:189P--).  |
| l2          | C43       | Molinari <i>et al.</i> , "The fibronectin-binding protein of <i>Streptococcus pyogenes</i> , SfbI, is involved in the internalization of group A streptococci by epithelial cells," <i>Infect. and Immun.</i> 65:1357-1363, 1997. |
|             |           |   |

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Robert Ziem

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|-------------|-----------|-----------------|----------|-------------------------|-------|-----------|---------------------|
| R2          | A1        | 4,784,989       | 11/15/88 | Höök <i>et al.</i>      | 514   | 21        | 09/13/83            |
|             | A2        | 4,980,279       | 12/25/90 | Peters <i>et al.</i>    | 435   | 7         | 04/15/86            |
|             | A3        | 5,175,096       | 12/29/92 | Höök <i>et al.</i>      | 435   | 69.1      | 05/09/90            |
|             | A4        | 5,189,015       | 02/23/93 | Höök <i>et al.</i>      | 514   | 2         | 12/05/91            |
|             | A5        | 5,320,951       | 06/14/94 | Höök <i>et al.</i>      | 435   | 69.1      | 01/22/93            |
|             | A6        | 5,416,021       | 05/16/95 | Höök <i>et al.</i>      | 435   | 252.33    | 09/23/93            |
|             | A7        | 5,440,014       | 08/08/95 | Höök <i>et al.</i>      | 530   | 326       | 04/28/94            |
|             | A8        | 5,453,489       | 09/26/95 | Ruoslahti <i>et al.</i> | 530   | 350       | 01/31/92            |
|             | A9        | 5,571,514       | 11/05/96 | Höök <i>et al.</i>      | 424   | 190.1     | 06/13/94            |
|             | A10       | 5,770,702       | 06/23/98 | Höök <i>et al.</i>      | 530   | 388.25    | 10/07/96            |

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|-------------|-----------|-----------------|----------|---------|-------|-----------|--------------------|
| R2          | B1        | WO 97/48727     | 12/24/97 | PCT     |       |           |                    |
|             | B2        | WO 97/45544     | 12/04/97 | PCT     |       |           |                    |
|             | B3        | WO 94/10330     | 05/11/94 | PCT     |       |           |                    |
|             | B4        | WO 94/18327     | 08/18/94 | PCT     |       |           |                    |
|             | B5        | WO 92/02555     | 02/20/92 | PCT     |       |           |                    |
|             | B6        | EP 0294349 A2   | 12/07/88 | Europe  |       |           |                    |
|             | B7        | EP 0294349 A3   | 12/07/88 | Europe  |       |           |                    |
|             | B8        | EP 0294349 B1   | 12/07/88 | Europe  |       |           |                    |

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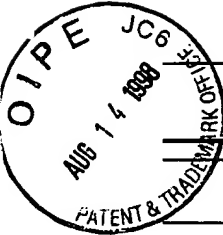
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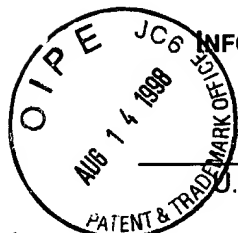
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|-------------|-----------|-----------------|----------|--------|-------|-----------|---------------------|
| R2          | B9        | EP 0397633      | 11/14/90 | Europe |       |           |                     |
|             | B10       | EP 0163623      | 12/04/85 | Europe |       |           |                     |
|             | B11       | EP 0342173 A2   | 11/15/89 | Europe |       |           |                     |
| 4           | B12       | EP 0342173 A3   | 11/15/89 | Europe |       |           |                     |
|             |           |                 |          |        |       |           |                     |

**Other Art (Including Author, Title, Date Pertinent Pages, Etc.)**

| Exam. Init. | Ref. Des. | Citation  |
|-------------|-----------|---|
| R2          | C1        | Bozzini <i>et al.</i> , "Multiple binding sites in fibronectin and the staphylococcal fibronectin receptor," <i>Eur. J. Biochem.</i> , 207:327-333, 1992.   |
|             | C2        | Ciborowski <i>et al.</i> , "Immunological response to a <i>Staphylococcus aureus</i> fibronectin-binding protein," <i>J. Med. Microbiol.</i> , 37:376-381, 1992.  |
|             | C3        | Flock <i>et al.</i> , "Cloning and expression of the gene for a fibronectin-binding protein from <i>Staphylococcus aureus</i> ," <i>EMBO J.</i> , 6:2351-2357, 1987.  |
|             | C4        | Fröman <i>et al.</i> , "Isolation and characterization of a fibronectin receptor from <i>Staphylococcus aureus</i> ," <i>J. Biol. Chem.</i> , 262:6564-6571, 1987.  |
|             | C5        | Greene <i>et al.</i> , "Adhesion properties of mutants of <i>Staphylococcus aureus</i> defective in fibronectin-binding proteins and studies on the expression of <i>fmb</i> genes," <i>Mol. Microbiol.</i> 17:1143-1152, 1995.   |
|             | C6        | Hanski and Caparon, "Protein F, a fibronectin binding protein, is an adhesin of the group A streptococcus <i>Streptococcus pyogenes</i> ," <i>Proc. Natl. Acad. Sci.</i> , 89:6172-6176, 1992.  |
|             | C7        | Hanski <i>et al.</i> , "Expression of protein F, the fibronectin-binding protein of <i>Streptococcus pyogenes</i> JRS4, in heterologous streptococcal and enterococcal strains promotes their adherence to respiratory epithelial cells," <i>Infect. Immun.</i> , 60(12):5119-5125, 1992. |
| 4           | C8        | Homonylo-McGavin <i>et al.</i> , "Identification of a <i>Staphylococcus aureus</i> extracellular matrix-binding protein with broad specificity," <i>Infect. and Immun.</i> , 61:2479-2485, 1993.  |

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|-------------|-----------|--|------|------|-------|-----------|---------------------|
| 22          | C9        | House-Pompeo <i>et al.</i> , "Conformational changes in the fibronectin binding MSCRAMMs are induced by ligand binding," <i>J. Biol. Chem.</i> 271:1379-1384, 1996.  |      |      |       |           |                     |
|             | C10       | Huff <i>et al.</i> , "Interaction of N-terminal fragments of fibronectin with synthetic and recombinant D-motifs from its binding protein on <i>Staphylococcus aureus</i> studied using fluorescence anisotropy," <i>J. Biol. Chem.</i> 269:15563-15570, 1994. |      |      |       |           |                     |
|             | C11       | Joh <i>et al.</i> , "Fibronectin receptors from gram-positive bacteria: Comparison of Active Sites," <i>Biochemistry</i> , 33:6086-6092, 1994.   |      |      |       |           |                     |
|             | C12       | Jönsson <i>et al.</i> , "Two different genes encode fibronectin binding proteins in <i>Staphylococcus aureus</i> : the complete nucleotide sequence and characterization of the second gene," <i>Eur. J. Biochem.</i> 202:1014-1048, 1991.                     |      |      |       |           |                     |
|             | C13       | Kline <i>et al.</i> , "Identification of a fibronectin-binding protein GfbA in pathogenic group G streptococci," <i>Infect. Immun.</i> 64:2122- 2129, 1996.  |      |      |       |           |                     |
|             | C14       | Kreikemeyer <i>et al.</i> , "Characterization of a novel fibronectin-binding surface protein in group A streptococci," <i>Molec. Microbiol.</i> , 17:137-145, 1995.  |      |      |       |           |                     |
|             | C15       | Kuypers and Proctor, "Reduced adherence to traumatized rat heart valves by a low-fibronectin binding mutant of <i>Staphylococcus aureus</i> ," <i>Infect. Immun.</i> 57:2306-2312.1989.  |      |      |       |           |                     |
|             | C16       | Lindgren <i>et al.</i> , "A fibronectin-binding protein from <i>Streptococcus equisimilis</i> : characterization of the gene and identification of the binding domain," <i>Veterinary Microbiology</i> , 41:235-247, 1994.                                     |      |      |       |           |                     |
|             | C17       | Lindgren <i>et al.</i> , "Cloning and expression of two different genes from <i>Streptococcus dysgalactiae</i> encoding fibronectin receptors," <i>J. Biol. Chem.</i> , 267:1924-1931, 1992.   |      |      |       |           |                     |
|             | C18       | Lindgren <i>et al.</i> , "Two different genes coding for fibronectin-binding proteins from <i>Streptococcus dysgalactiae</i> - the complete nucleotide sequences and characterization of the binding domains," <i>Eur. J. Biochem.</i> , 214:819-827, 1993.    |      |      |       |           |                     |
| 2           | C19       | McGavin <i>et al.</i> , "Fibronectin binding determinants of the <i>Staphylococcus aureus</i> fibronectin receptor," <i>J. Biol. Chem.</i> 266:8343-8347, 1991.  |      |      |       |           |                     |

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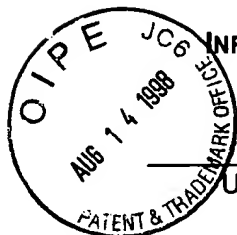
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|-------------|-----------|---|------|------|-------|-----------|---------------------|
| 12          | C20       | McGavin <i>et al.</i> , "Fibronectin receptors from <i>Streptococcus dysgalactiae</i> and <i>Staphylococcus aureus</i> : Involvement of conserved residues in ligand binding," <i>J. Biol. Chem.</i> 268:23946-23953, 1993. |      |      |       |           |                     |
|             | C21       | Minhas <i>et al.</i> , "Detection by PCR and analysis of the distribution of a fibronectin-binding protein gene ( <i>fbn</i> ) among staphylococcal isolates," <i>Bacterial Pathogenicity</i> , 42:96-101, 1995.            |      |      |       |           |                     |
|             | C22       | Murphy <i>et al.</i> , "Heparin-binding peptides from thrombospondins 1 and 2 contain focal adhesion-labilizing activity," <i>J. Biol. Chem.</i> , 268(35):26784-26789, 1993.   |      |      |       |           |                     |
|             | C23       | Okada <i>et al.</i> , "M protein and protein F act as important determinants of cell-specific tropism of <i>Streptococcus pyogenes</i> in skin tissue," <i>J. Clin. Invest.</i> , 94:965-977, 1994.                         |      |      |       |           |                     |
|             | C24       | Ozeri <i>et al.</i> , "A two-domain mechanism for group A streptococcal adherence through protein F to the extracellular matrix," <i>EMBO J.</i> 15:989-998, 1996.  |      |      |       |           |                     |
|             | C25       | Patti and Höök, "Microbial adhesins recognizing extracellular matrix macromolecules," <i>Curr. Opin. Cell Biol.</i> 6:752-758, 1994.  |      |      |       |           |                     |
|             | C26       | Patti <i>et al.</i> , "MSCRAMM mediated adherence of microorganisms to host tissues," <i>Annu. Rev. Microbiol.</i> 48:585-617, 1994.  |      |      |       |           |                     |
|             | C27       | Potts and Campbell, "Fibronectin structure and assembly," <i>Curr. Opin. Cell Biol.</i> , 6(5):648-655, 1994.   |      |      |       |           |                     |
|             | C28       | Raja, <i>et al.</i> , "Peptide analogs to a fibronectin receptor inhibit attachment of <i>Staphylococcus aureus</i> to fibronectin-containing substrates," <i>Infection and Immunity</i> , 58(8):2593-2598, 1990.           |      |      |       |           |                     |
|             | C29       | Rakonjac <i>et al.</i> , "DNA sequence of the serum opacity factor of group A <i>Streptococci</i> : identification of a fibronectin-binding repeat domain," <i>Infection and Immunity</i> , 63(2):622-631, 1995.            |      |      |       |           |                     |
|             | C30       | Rozalska <i>et al.</i> , " <i>Staphylococcus aureus</i> fibronectin-binding proteins FnBPs: Identification of antigenic epitopes using polyclonal antibodies," <i>APMIS</i> 102:112-118, 1994.                              |      |      |       |           |                     |
|             | C31       | Rozalska and Wadström, "Protective opsonic activity of antibodies against fibronectin-binding proteins (FnBPs) of <i>Staphylococcus aureus</i> ," <i>Scand. J. Immunol.</i> , 37:575-580, 1993.                             |      |      |       |           |                     |
|             | C32       | Sela <i>et al.</i> , "Protein F; An adhesin of <i>Streptococcus pyogenes</i> binds to fibronectin via two distinct domains," <i>Molec. Microbiol.</i> , 10:1049-1055, 1993.   |      |      |       |           |                     |

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|-------------|-----------|--|------|------|-------|-----------|---------------------|
| 22          | C33       | Signäs <i>et al.</i> , "Nucleotide sequence of the gene for a fibronectin binding protein from <i>Staphylococcus aureus</i> : Use of this peptide sequence in the synthesis of biologically active peptides," <i>Proc. Natl. Acad. Sci. USA.</i> 86:699-703, 1989. |      |      |       |           |                     |
|             | C34       | Speziale <i>et al.</i> , "Fibronectin binding to a <i>Streptococcus pyogenes</i> strain," <i>J. Bact.</i> , 157:420-427, 1984.   |      |      |       |           |                     |
|             | C35       | Speziale <i>et al.</i> , "A monoclonal antibody enhances ligand binding of fibronectin MSCRAMM (adhesin) from <i>S. dysgalactiae</i> ," <i>J. Biol. Chem.</i> 271:1371-1378, 1996.   |      |      |       |           |                     |
|             | C36       | Strong <i>et al.</i> , "Isolation, characterization and synthesis of peptides from human fibrinogen that block the staphylococcal clumping reaction and construction of a synthetic clumping particle," <i>Biochemistry</i> , 21:1414-1420, 1982.                  |      |      |       |           |                     |
|             | C37       | Sun <i>et al.</i> , "Identification of D motif epitopes in <i>Staphylococcus aureus</i> fibronectin-binding protein for the production of antibody inhibitors of fibronectin binding," <i>Infection and Immunity</i> , 65(2):, 1997.                               |      |      |       |           |                     |
|             | C38       | Talay <i>et al.</i> , "Fibronectin-binding protein of <i>Streptococcus pyogenes</i> : Sequence of the binding domain involved in adherence of streptococci to epithelial cells," <i>Infect. Immun.</i> , 60:3837-3844, 1992.                                       |      |      |       |           |                     |
|             | C39       | Talay <i>et al.</i> , "Domain structure and conserved epitopes of Sfb protein, the fibronectin-binding adhesin of <i>Streptococcus pyogenes</i> ," <i>Mol. Microbiol.</i> , 13(3):531-539, 1994.   |      |      |       |           |                     |
|             | C40       | Valentin-Weigand <i>et al.</i> , "The fibronectin binding domain of the Sfb protein adhesin of <i>Streptococcus pyogenes</i> occurs in many group A streptococci and does not cross-react with heart myosin," <i>Microbial Pathogenesis</i> , 17:111-120, 1994.    |      |      |       |           |                     |
|             | C41       | Vaudaux <i>et al.</i> , "Fibronectin is more active than fibrin or fibrinogen in promoting <i>Staphylococcus aureus</i> adherence to inserted intravascular catheters," <i>J. Infect. Dis.</i> 160:865-875, 1993.  |      |      |       |           |                     |

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